

What is Claimed:

1 1. A method of manufacturing a device having embedded memory
2 including a plurality of memory cells, the method comprising the steps of:

3 applying a first test stress to selected cells of the plurality of
4 memory cells with a built-in self test;

5 identifying at least one weak memory cell;

6 repairing the at least one weak memory cell; and

7 applying a second test stress to the selected cells and the repaired
8 cells with the built-in self test.

1 2. The method of claim 1, wherein the step of applying a first test
2 stress further comprises the step of operating the memory cells with a timing that exceeds
3 an operational timing.

1 3. The method of claim 1, further comprising the step of applying the
2 first test stress in at least one of a plurality of test sequences.

1 4. The method of claim 1, wherein the step of applying a second test
2 stress includes the step of applying an operational timing.

1 5. The method of claim 1, further comprising the step of applying the
2 second test stress in at least one of a second plurality of test sequences.

1 6. The method of claim 1, wherein the step of applying a first test
2 stress includes the step of operating each memory cell with at least one tight timing, the
3 at least one tight timing being shorter than an operational timing.

1 7. A method for testing during manufacturing a device having
2 embedded memory including a plurality of memory cells, the method comprising the
3 steps of:

4 applying a first set of timings to selected cells of the plurality of
5 memory cells using built-in self test controls;

6 testing the selected cells using the first set of timings;

7 identifying weak memory cells;

8 repairing the weak memory cells;

9 applying a second set of timings to the selected cells and the
10 repaired cells using the built-in self test controls; and

11 testing the selected cells and the repaired cells using the second set
12 of timings.

1 8. The method of claim 7, wherein the first set of timings provides at
2 least a first stress to the cells and the second set of timings provides at least a second
3 stress to the cells.

1 9. The method of claim 8, wherein the second set of timings tests the
2 memory cells at an operational timing.

1 10. The method of claim 8, wherein the first set of timings tests the
2 memory cells at timings that are faster than an operational timing.

1 11. The method of claim 8, further comprising the steps of using the
2 first set of timings to provide at least a third stress to the cells and using the second set of
3 timings to provide at least a fourth stress to the cells.

1 12. A method of manufacturing a device having embedded memory
2 including a plurality of memory cells, the method comprising the steps of:

3 (a) providing a first plurality of timings and a second plurality
4 of timings to built-in self test controls;

5 (b) applying at least one of the first plurality of timings to
6 selected cells using the built-in self test controls;

7 (c) identifying failed memory cells;

8 (d) repairing the failed memory cells; and

9 (e) repeating steps (b) to (d) by applying additional selected
10 ones of the first plurality of timings to the cells.

1 13. The method of claim 12 further comprising the step of (f) applying
2 at least one of the second plurality of timings to each of the cells using the built-in self
3 test controls.

1 14. The method of claim 13 further comprising the step of (g)
2 repeating step (f) by applying additional selected ones of the second plurality of timings
3 to each of the cells.

1 15. A device for testing an embedded memory having a plurality of
2 memory cells during manufacture of the embedded memory, the device comprising:

3 a first timer for applying a plurality of timings to the memory cells;

4 a second timer for modifying at least one of the plurality of
5 timings; and

6 a logic circuit for testing the memory cells by applying the at least
7 one of the plurality of timings to the memory cells.

1 16. The device of claim 15, further comprising a sensor coupled to the
2 memory cells for determining whether the memory cells failed the testing; and a repair
3 component for repairing failed cells.

1 17. The device of claim 15, wherein the first timer includes the second
2 timer and the second timer includes a delay circuit for modifying the at least one of the
3 plurality of timings.

1 18. The device of claim 17, wherein the first and second timers are
2 located in at least one area of the embedded memory.

1 19. The device of claim 15, wherein the embedded memory includes a
2 built-in self test for controlling the testing for determining whether any memory cells
3 failed the testing.

1 20. The device of claim 19, wherein the embedded memory includes a
2 built-in self repair for repairing failed memory cells.